

Kristin R. Shepperd

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Education

- 2002-present *Georgia Institute of Technology, School of Chemistry & Biochemistry, Atlanta, GA – Doctoral Candidate*
- 1998-2002 *Georgia College & State University, Milledgeville, GA – B.S. Chemistry*

Research Experience

- 2002-present Georgia Institute of Technology Atlanta, GA
Research Advisor: Dr. Thomas Orlando
Ph. D. Research: Low Energy Electron Collisions with Thin Molecular Films of Unsaturated Hydrocarbons on Silicon.

Thin films of acetylene (and other unsaturated hydrocarbons) are deposited on single crystal silicon substrates. Irradiation of the surface with low energy electrons induces dissociative electron attachment of the adsorbate, which results in the formation of neutral and anionic fragments, thereby leading to deposition. Neutral atomic and molecular hydrogen are desorbed by this process and are detected using resonance enhanced multiphoton ionization (REMPI).

- 2001-2002 Georgia College & State University Milledgeville, GA
Research Advisor: Dr. Rosalie Richards
Undergraduate Research: Synthesis and characterization of halogenated metalloporphyrins.

Porphyrins were synthesized and modified by metalating their centers with various transition metal atoms, as well as halogenation of the outer benzene rings of substituted porphyrins. Porphyrins were analyzed via UV-Vis absorption spectroscopy and nuclear magnetic resonance (NMR) spectrometry.

Teaching Experience

2002-2004 Georgia Institute of Technology Atlanta, GA
Graduate Teaching Assistant
-General Chemistry (CHEM 1310)
-Inorganic Chemistry Lab (CHEM 1313)

Publications and Presentations

C. D. Lane, K. R. Shepperd, A. B. Aleksandrov, T. M. Orlando. "Electron stimulated desorption of cations from SiCl₄ multilayers adsorbed on Si(111)." *Surface Science*. (2005) **593(1-3)** 173-179.

K. R. Shepperd, T. Li, J. Hass, A. B. Aleksandrov, P. N. First, T. M. Orlando. "Growth of silicon carbide via electron beam enhanced chemical vapor deposition (EBCVD)." *Poster presentation at the 231st National Meeting of the American Chemical Society, 2006*, Atlanta, GA, USA.

K. R. Shepperd, T. Li, P. N. First, T. M. Orlando. "Detection of hydrogen during low-energy (5-50 eV) electron bombardment of acetylene adsorbed on Si(111)." *Oral presentation at the 54th American Vacuum Society International Symposium and Exhibition, 2007*, Seattle, WA, USA.

Awards and Honors

Georgia Institute of Technology	GAANN Fellowship	2002-2005
Georgia Institute of Technology	School of Chemistry GTA Award	2003-2004
Georgia College & State University	Lucy B. C. Ferguson Scholarship	2002

Affiliations and Memberships

American Association for the Advancement of Science
American Chemical Society
National Organization of Black Chemists and Chemical Engineers